approach

NOVEMBER 1978 THE NAVAL AVIATION SAFETY REVIEW

NAVY

SURVIVAL

The Problems

By LT Stephen C. Hallam
VA-81

A great deal of interest in water survival and immediate-action emergencies has been generated in the Light Attack community as a result of two recent catapult emergencies. Having been a fortunate survivor of one of those accidents, I would like to pass on to the rest of the Naval aviation community my experience and what I learned. My intent is not to prescribe proper procedures – as each aviator might have handled the crisis somewhat differently – but to generate further thought and discussion. In this way, should another Naval aviator find himself in a similar predicament, he will be better prepared to handle the emergency.

WHEN I looked at the flight schedule one morning, I chuckled to myself that winning the previous night's bet was like stealing candy from a baby. Since the day before was my LSO duty day, I knew I would be flying on the first event – either a SSSC hop or an ACM hop. I knew it would be just my luck to miss a chance at the ACM hop so I bet my yeoman a coke that I would be scheduled for the less exciting SSSC hop. Though I won the bet, little did I know how exciting the day's events would be!

Refueling operations had carried long into the night, so the re-spot caused a 15 minute delay in the expected launch time. I welcomed the little extra time the delay offered and wanted to thoroughly brief two-plane, inflight procedures with my wingie and have a little extra time to preflight the

Some Solutions

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Several recent accidents have resulted in pilots drowning or near-drowning after apparently successful ejections. These tragic events were caused primarily by the inability of the ejectee to fully inflate the life preserver and get free from the parachute and shroud lines. An injured, incapacitated, or unconscious individual may not be able to accomplish all the actions required for survival. The Naval Air Systems Command presently has programs underway to provide automatic life preserver inflation and parachute divestment.

Auto-Inflator. In April 1977 the Naval Air Development Center conducted a market search to identify all manufacturers of water actuated devices to be utilized on life vest inflators. Nine companies were identified as possible suppliers. The requirements for the devices were:

- Must automatically activate when immersed in water of 32°F or higher. Actuation must occur in salt water or water as pure as mountain streams.
- Must have a manual pull feature as is presently available with the toggles.
- The inflator must fit into the space presently available in the life preserver.
- The device must be cartridge actuated with a replacement power source (batteries).
- The device must be "rainproof" and not be actuated by humidity, vibration, heat, or electromagnetic radiation.

In August 1977 some contractors submitted units for testing. The NOS (Naval Ordnance Station) Indian Head, Maryland was tasked to perform design verification, testing, and to recommend a contractor to supply devices for further testing. The inflator units were exposed to environmental

plane. I climbed out on deck about 50 minutes prior to the launch and found my aircraft spotted just aft of cat 4.

It was a remarkably beautiful day for the Med, not only was the temperature a pleasant 75 degrees with only a few puffy clouds around 3000 feet, but there was none of the annoying haze we had grown accustomed to the previous few weeks. Since I had manned early, I received the huffer almost immediately and was one of the first aircraft started. I savored the extra time I had to thoroughly complete all my post-start cockpit checks, and felt very confident at flying that day.

The aircraft director surprised me a bit as the chains were broken down and he directed me away from cat 4 and towards the bow. It was rare for A-7s to use the bow cats, and I speculated whether it was due to my gross weight or because I was one of the first aircraft ready to go. "no matter" I said to myself, "just don't pull a delta sierra and do your clearing turn in the wrong direction." Personally, I never was too fond of cat shots off the bow. The firm kick in the pants and the elevator at the end of the shuttle combined to make a really smooth ride on the waist. Nevertheless, I was too absorbed in takeoff checks to think too much of the differences.

I was spotted on cat 1 about 5 minutes prior to the main launch. You could sense the tension on the flight deck as last minute preparations were being conducted for the launch and men in colored jerseys scurried about the deck, almost like a pre-game warm-up. As the *Phantom* on cat 2 beside me took tension, I marveled at the teamwork and coordination that made the launching evolution seem so effortless.

Now it was my turn. As the director gave me the signal to take tension, I jammed the throttle to military and pushed the throttle friction all the way forward. Then came the final monitoring of engine instruments and cycling of controls to ensure the aircraft was ready to fly. Once confident the aircraft was ready to go, I went through my last-minute ritual of preparing in case the aircraft wouldn't fly. Banging my head against the headrest to double-check my ejection seat safety handle was up, I reached down to feel for the position of my lower ejection handle. I took my hand off the stick momentarily to feel for the LPA initiator toggle, and after touching the right toggle, I snapped a salute at the catapult officer – signaling my readiness for both the expected and unexpected.

The uneasy delay following the cat officer's acknowledgement of my salute was interrupted by the welcome jolt as the shuttle accelerated down the track.

extremes, tested for safety from electromagnetic radiation and electrostatic discharge. After all tests were performed, a corporation was selected.

A large number were placed on order and the first quantity of 200 is due in November 1978. These will be sent to NOS for service release testing. The tests conducted for the design verification phase will be duplicated in a large enough quantity to demonstrate reliability. The cartridge will be characterized to provide a standard against which future procurements will be made. This phase of testing will require 3 months. In January 1979 the remaining 750 units will be delivered to Operational Test and Evaluation Force for an operational evaluation. The devices will be flown in a variety of operational aircraft to demonstrate compatibility and operational suitability. The operational evaluation will require approximately 3 months.

In order to place a new piece of equipment in Navy inventory it must receive ASU (Approval for Service Use). As soon as the required testing and OPEVAL is complete, ASU will be vigorously pursued. Every effort will be made to expedite procurement of the device, while at the some time assuring that the equipment reaching the Fleet is safe, reliable and supportable. After ASU, NAVAIR will begin large quantity buys. The goal is to equip every crewmember flying in an ejection seat equipped aircraft with an automatic life vest inflator.

Automatic Parachute Release. Parachute water dragging and shroud line entanglement are two factors which contribute to the relatively high drowning rate after over-water ejections. An automatic water actuated parachute canopy release is currently under development to eliminate the potential of water dragging and entanglement. This device, which will be attached directly to the Koch parachute release fitting, contains an electronic sea water sensing package that initiates a small ballistic actuator to drive a piston and release the Koch fitting within two seconds after immersion in salt water. Continued

FLU-8/P Automatic Inflation Device

After the first third of the cat stroke, I became aware that the aircraft was not accelerating as usual, but subconsciously I kept hoping that it would pick up further down the track. From the first-third to nearly two-thirds down the cat-track, there followed a period of momentary panic and confusion as I attempted to determine what was happening to my aircraft. I suspected that I had a cold cat shot, but I held on to the hope that I might reach minimum flying airspeed. The further down the stroke, however, the more obvious it was that I would not get airborne. The airspeed had not come off the 80-knot peg yet and the bow of the ship was rapidly approaching. At this time I realized I would probably have to eject from the aircraft, but I was even more aware of the eery silence throughout the events leading to my decision.

Even under the most trying circumstances, the decision to leave a perfectly good aircraft is probably the most difficult and reluctant decision a Naval aviator can make. Nevertheless, as the nose of the aircraft approached the bow, I reached down and grasped the ejection handle, as I had practiced so many times before. The rocket motor fired just as the nose of the aircraft dropped over the edge, and I remember being thrown forward and looking at the ocean below as the aircraft dived for the water.

As soon as I was free of the aircraft and able to function, I immediately reached and unfastened one side of my oxygen mask, in case I got incapacitated on water impact. Next, I reached down and tugged on my right LPA toggle, trying to recall all the training I had received for just such an emergency. About the time I was aware that the LPA was not inflating, my attention was diverted by the sound of the ballistic spreader firing and the almost immediate opening shock.

Water survival soon became my most immediate concern. No sooner had I recovered my senses from the opening shock than I impacted the water and sank nearly 25 feet. I made a desperate attempt to get the LPA to inflate, pulling once more on the right toggle, unable to find the left toggle in all the confusion. Despite another tug on the toggle, the LPA did not inflate and I quickly began running out of air and ideas. The more I attempted to work on the LPA, the further I sank, so I decided that my first priority was to reach the surface.

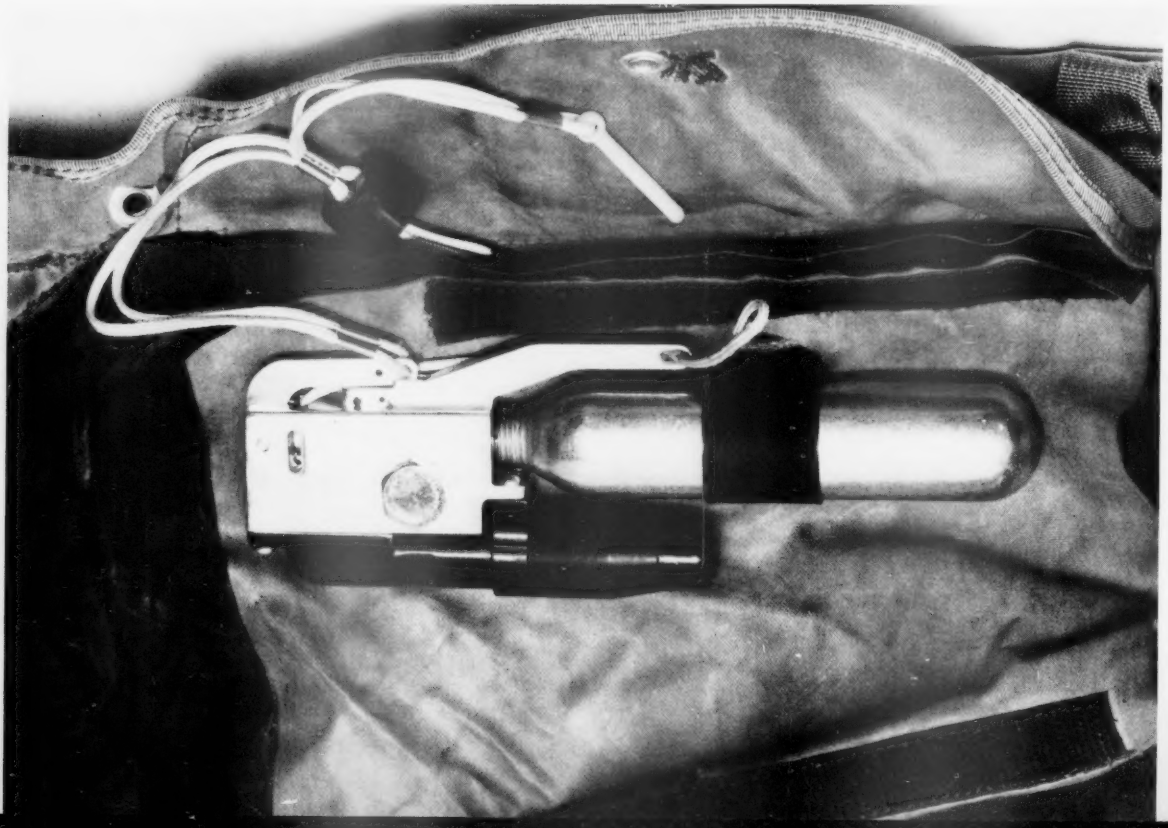
I tried to swim to the surface, but the weight of the seat pan and flight gear made me feel like I was suspended under the water, so I undid my lower Koch fittings and released my seat pan. Without the dead weight, I found I could swim to the surface. Somewhere in this first attempt to

reach the surface I felt encumbered by the drag from my flight helmet, so I removed it. As I broke the surface, I gasped for air, having been underwater for what I estimated was nearly a minute. At this point I noticed the ship's anchor passing me nearly 50 feet away and I was relieved to see that the ship would pass well clear. My next concern was to prevent the chute from sinking and dragging me under with it. Although I was having great difficulty staying afloat without flotation gear, I was surprised how effortlessly I was able to reach the upper Koch fittings to release the chute. Fortunately, the chute was stretched out directly behind me as a result of impacting the water at a nearly horizontal position and was no threat of entangling me.

About the time that the ship's screws passed me, I was bobbing up and out of the water working unsuccessfully to activate my LPA. The constant dunkings which occurred each time I reached down for the toggles were wearing me out enormously and I began to fear I would lose the strength to stay afloat. To try to regain my strength, I concentrated on relaxing and began a dead man's float on my back, using an elementary back stroke to stay afloat. While the face down method taught in water survival may have been preferable, I wanted to be aware of the SAR effort around me and my lungs were burning from lack of air.

Almost immediately I saw the helo directly aft of me headed in my direction. As the rotor wash enveloped me, I closed my eyes and drew on as much reserve strength as I could to relax and stay on top of the water. Soon I felt the swimmer grab hold of me, dragging me towards the horse collar. I'll never forget how relieved I was as the helo pulled us out of the water. Once inside the helo, I realized that my energy was so drained that I could not even sit up. Within a few hours, though, I was moving about normally with only minor stiffness from the ejection.

Some of the lessons I learned:



• In a similar crisis situation a pilot *needs all the reinforcement and assistance he can get.* Even though all my senses told me rapidly the nature of the emergency, I was extremely reluctant to respond to them. My hesitation, even for as little as a couple of seconds, could have been disastrous. One word to reinforce what my senses were telling me would have resulted in more immediate action. By the same token, a pilot must constantly be mentally prepared to respond immediately to such emergencies.

• The age-old adage *"make a decision and stick to it"* cannot be overemphasized. The times during the emergency when I could not decide what my priorities were, particularly underwater, nearly led to disastrous results.

• A pilot's *physical conditioning can mean the difference between life and death.* There is no doubt in my mind that had I not been in good condition, this article would never have been written. Fortunately, our command has always recognized the importance of physical fitness and encouraged each pilot to make the necessary time and effort to stay in shape.

• *Know your survival gear.* Even though I have often made it a point to check out my gear, I found that in a crisis situation only an absolutely thorough knowledge can prevent potentially disastrous confusion. ◄

The principle of operation is simple but a design requirement to virtually preclude inadvertent operation of this critical component results in a significant technical challenge. This device will be insensitive to environmental influence such as salt spray, rain, humidity, electromagnetic interference, shock, temperature changes and vibration which could cause inadvertent operation. A very extensive test program which includes test ejections and live parachute jumps has been established to verify achievement of all design, performance, and reliability requirements.

This water actuated parachute divestment system will be small and will not interfere with normal operation of the Koch fitting. When the device is immersed in water, the electrical conductivity of salt water completes separate electrical circuits that arm and fire the system to release the parachute. The device will not operate in fresh water or rain water since their conductivity is insufficient to initiate the system. The amount of explosive is so small that the device can be held in your hand. The system is completely self contained and electrical power is provided by a highly reliable lithium battery which has a long service life.

Maximum efforts to accelerate this design, development, and test program have been implemented to assure early Fleet introduction. Current planning is to introduce this system in A-7 aircraft in late 1979 or early 1980. Incorporation in other aircraft will follow. This automatic parachute divestment system when combined with the automatic life vest will significantly improve the chances of survival after over-water ejections. ◄

Closeup shows CO^2 cartridge of FLU-8/P Automatic Inflation Device.

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To the Hilt. An H-46 departed a coastal air station to transport an aircraft engine to a ship for a downed helicopter. The helicopter was flying at 500 feet altitude, 65 knots, hauling a 1700-pound external load. The weather was CAVU, and the pilots received a TACAN lock-on at 35 nm, which put the ship about 50 nm off the coast.

Voice contact was established inside of 10 miles and the ship was sighted at 3 miles. The ship was ready for the inbound helicopter, and a green deck was given upon arrival. The engine was delivered without problems, and the pilot remained an extra 5 minutes to retrieve the net and pendant.

When the helicopter departed the ship, the nearest land was 45 nm, Homeplate was 78 nm, and the fuel state was 960 pounds. The HAC had reached bingo fuel while delivering his load, so he knew he didn't have sufficient fuel to return to Homeplate.

After crossing the beach, the HAC elected to land at a helo pad because of low fuel state. His fuel gage read 400 pounds. However, his tanks took 353 gallons (capacity was 376 gallons), so his fuel remaining upon touchdown was only 150 pounds vice 400 pounds.

Some readers may wonder why he didn't refuel aboard ship after delivering the helicopter engine. He didn't because the ship wasn't certified to handle H-46s, and his helicopter wasn't equipped for HIFR (helicopter inflight refueling).

The HAC had pushed the aircraft to its operational limit. The mission involved urgent material delivery, and he was equal to the occasion. He also was smart enough to land at an improved site even though, according to the gages, some other pilot might have tried to stretch the return flight with a completely different ending.

I thought that . . . I assumed that . . . Someone should have . . . The P-3B was being readied for a turnaround launch. The flightcrew proceeded to the aircraft prior to its release by maintenance control. There were two downing gripes which were being worked on before the crew's preflight.

Two electricians checked in with the flight engineer prior to performing maintenance on the copilot's gear handle light. Also due to arrive at any moment was another group to perform a tire change.

The electricians raised the gear handle after doublechecking to ensure all gear pins were installed. There was no power on the aircraft. A short time later, the electricians put the gear handle back down, then left for the hangar to get additional tools.

The flight engineer who was outside the aircraft saw the electricians leave the scene but did not talk to them. The tire change was made, the flight engineer thought everything had been completed, and assumed the aircraft was ready to preflight. He boarded the P-3, checked the gear handle DOWN, and started the APU. He completed the interior preflight and climbed out to start the outside preflight.

At this time, he saw the electricians return, but the flight engineer didn't challenge them, nor did they have any words of wisdom for the flight engineer. The electricians proceeded to the cockpit to resume some maintenance on the gear handle. They checked the hydraulic pumps OFF, assumed the gear pins were installed, and raised the gear handle.

Meanwhile the flight engineer, who had no idea of what was going on in

the aircraft, removed the gear pins during his preflight. The copilot boarded the aircraft to begin his preflight and was unaware of any ongoing maintenance. (Where did the electricians go?) After briefly scanning the cockpit, the copilot turned on a hydraulic pump. When he did, he heard a clunking sound.

The flight engineer was in the nose wheelwell and tried to pull the gear pin, but it was binding and he realized that someone had raised the gear handle. He then quickly went to the port wheelwell to repin the gear, but was unsuccessful because the gear had moved off center. His next maneuver took him to the cockpit, as fast as he could move, and he lowered the gear handle. He then returned outside and pinned the gear.

The squadron endorsement stated: "By chance, a tragedy was narrowly averted. The landing gear overcenter locks theoretically prohibit raising the gear on the ground. However, reduced weight on the nose gear due to a temporary aft CG, such as a congregation of crewmen in the galley, may well have resulted in gear collapse. The two cause factors in this incident were the flightcrew starting to preflight the aircraft before it was released by maintenance control and the lack of communications between the flightcrew and maintenance groups."

Fine-Feathered Friend FODs Fin, Foiled Flight. LTJG Fred Wilson, of VS-30 *Diamond Cutter* fame, recently added a new dimension to flight deck operations when he trapped a bird with the tail of his S-3A *Viking*. LTJG Wilson was in the pilot's seat when he was signalled to erect the fin (vertical tail) of the aircraft. As the fin was coming to the erect position, an errant bird of uncertain species was apparently making a low pass over USS FORRESTAL. It flew in the narrowing space at the hinge and was trapped at the ankle by the edges coming together.

An alert observer noticed the bird's predicament and signalled to have the fin folded. LTJG Wilson complied, and the bird was released, apparently unharmed as he sped off toward a safer refuge than a CV with flight operations in progress.

There was no damage to the S-3's carnivorous tail fold mechanism.

The "Rough Riders" Ride Again! Two pilots in a T-28 started a night takeoff, rolled about 1000 feet, and then aborted. They had noted a continuous bumping and decided something was wrong. Something was. They had lined up on the port side runway lights vice the centerline. The rough ride wiped out several lights, damaged the port main landing gear and nosewheel rims, zapped the arresting gear chain, and drove two egos to rock bottom.

Sick Motor. Five minutes after takeoff, while climbing through 700 feet at 80 KIAS, the crew of an H-53 heard a loud bang. Immediately, there was a loss of power as the torque and N_f on the No. 1 engine dropped to zero.

The HAC lowered collective to stabilize his turns, and the copilot dumped fuel to lighten the helo. They returned to the field and made a routine run-on landing. After shutting down, two rags were found partially ingested in the No. 1 engine.

The rags had caused severe compressor stalls. Apparently, they had been left in the engine inside the EAPS (engine air particle separator) housing during a 28-day inspection. It is surmised that the rags were lodged in such a fashion that they were not ingested until ram air reached a maximum, since the EAPS doors became fully open at 80 KIAS.

The HAC and the plane captain had both checked the engine intakes and EAPS compartments, but failed to see the rags. The investigators discovered that a person standing more than 18 inches from the aft end of the open EAPS compartment could not detect foreign objects in the bottom of the housing, due to lack of light.

It is recommended that all H-53 crewmembers and maintainers remember the necessity for a close, visual inspection of the EAPS compartment with a flashlight prior to flight. ◀

THE RIGHT TIME
but the wrong place

Navy T-39: Civilian Field Tower, this is Navy Sabreliner 01 about 5 miles out for a visual approach, over.
Civilian Tower: Sabreliner 01, you're in sight, cleared to land Runway 15.
Navy T-39: Ah, Tower, is that Cessna turning final a touch-and-go or full stop?
Tower: Sabreliner 01, there's no traffic in the air between you and the runway.
Copilot (at controls): Gee, the runway sure looks narrow.
Crew Chief (in jump seat): I don't think this is the right field.
Pilot in Command: Take it around because of that Cessna. No, hold it, he's lifting off now. Keep coming with the approach.
Civilian Tower: Sabreliner 01, are you sure you're lined up with Civilian Field?

Sabreliner 01 was not. The T-39 touched down at an uncontrolled light civil field 3 miles north of the desired landing site. And the runway was only 3000 feet long! On touchdown, the pilot at the controls checked the brakes, and the No. 1 engine was secured (authorized by NATOPS to reduce residual thrust). After 1000 feet of roll, however, the PIC recognized the inadequacy of the runway and ordered a go-around. The copilot came up with the power on the No. 2 engine, but then the aircraft commander realized that No. 1 was shut down. He ordered No. 2 secured and directed the copilot to "ride it out."

At this point, the T-39 departed the prepared runway surface to the left as a result of the asymmetric thrust application and the crosswind. The runaway *Sabreliner* came to rest in a plowed field, suffering substantial damage. The crew exited the aircraft unharmed.

The pilot in command must bear the brunt of the responsibility for this accident. He elected to terminate his STAR (standard arrival route) with a visual approach rather than an instrument approach even though he had never flown into his filed destination before. Although it was still daytime, visibility was somewhat restricted due to haze. Then, despite abnormalities on the approach in the form of uncalled traffic landing at the field, the copilot's comment about the narrow runway, and the flight engineer's question about the field, the PIC elected to continue the approach to a landing. Although his decision to shut down one engine after touchdown was not a violation of NATOPS, it took away the waveoff option. The T-39 could not have made a single-engine waveoff from the point where power was advanced. But the aircraft could have been stopped on the runway if power had not been advanced for the go-around.

This was certainly not the first time a naval aircraft landed at an airport other than its intended destination. This type of mishap usually occurs during conditions of darkness or marginal visibility with the pilot arriving on a visual approach. There are several places around the U.S. that have gained a reputation over the years of being particularly susceptible to mistaken identity. Examples include Oakland International instead of Alameda NAS, Biggs Army Air Base instead of El Paso International, and Norfolk International instead of Navy Norfolk, just to name a few. The advent of positive control operations has greatly reduced the number of incidents of this nature, but as proved by the T-39 mishap, it can still happen.

How is it possible to avoid this type of mishap? One of the recommendations was to change OPNAV 3710 to *require* an instrument approach when going into an unfamiliar field or when going into any field other than homebase during hours of darkness. It may be unnecessary and a bit too restrictive to completely exclude night visual approaches away from homebase under all circumstances, but good headwork certainly dictates using an instrument approach when going into a strange field at night or during

marginal visibility conditions. This is particularly true if the airfield is located in a metropolitan area since the jumble of light makes it just that much more difficult to pick out your intended landing site.

Beyond that, thorough preflight preparation is another good way to avoid embarrassing situations. All the charts, approach plates, and publications covering the destination field should be studied to determine:

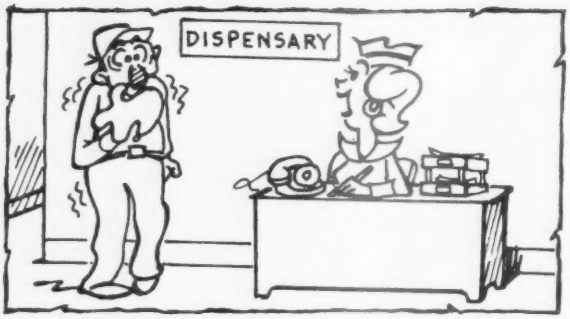
- General layout of the field and runway orientation, width, and length.
- Location of other airports in the vicinity.
- Availability of navaids serving the facility and their actual location.
- Light configuration of the field and runways.

The IFR Enroute Supplement comments should be read closely. A caution therein about mistaking a nearby airport is a sure bet that someone before you was responsible for insertion of that comment. Be sure and study all the charts, including area charts if available, since different information may appear on different charts. In this accident, for example, the small VFR field appeared on the low-altitude charts, but did not appear on the approach plate or STAR, nor was it discussed as a hazard in the Enroute Supplement comments.

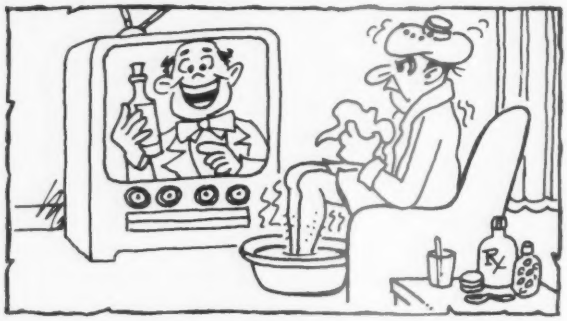
A final note on this accident was the PIC's failure to execute a waveoff. There were several discrepancies that existed during the approach that could have warranted a waveoff simply to reevaluate the situation. Any pilot who doesn't include a waveoff among his landing options is seriously limiting his opportunity for a string of accident-free hours.

This pilot was not the first to land at the wrong airport – and he probably won't be the last. Good preflight preparation, staying with radar, and using sound headwork should prevent *you* from being the next pilot involved in an embarrassing – or dangerous – wrong field landing. ◄

colds in a capsule



"The Doc's not here . . . he's out with a cold."



"Don't wait 'til you GET a cold! Take *PREVENTEX* . . . the only medication containing Gullibileum."

"Stow it! With all the paperwork in my office, I can't chance giving my secretary a cold."

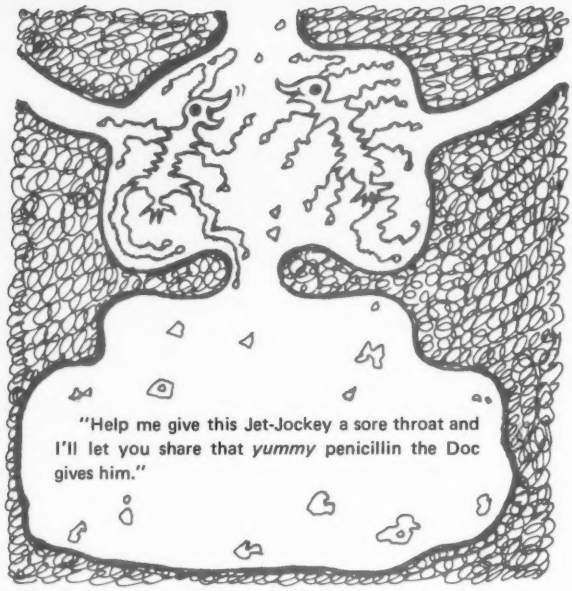
"Whaddya mean, *DEW* dot a dold? I dot a digger dold den dew dot!"

NOW that we are in the middle of the runny-nose, blocked-ear, and the bloodshot-eye season, it is high time that we pass the word on the status of current medical knowledge with regard to the Common Cold (also referred to as Coryza, Catarrhal Fever, Rhinorrhea, Minimal Influenza, and a host of more vulgar terms and phrases). It is caused by a tiny virus about whose likes, dislikes, sexual desires, and church affiliations we know nothing. As a matter of fact, all we do know for sure is that the little rascal is two one-millionths of an inch in diameter, and we do not even know whether that is around this way or through that way.

We do know that he is a real crazy traveler. He makes the Marine Corps IG team look like it was chained to the Washington Monument. Almost everyone in the world has colds, and there is no line drawn between race, color, creed, or political convictions. There are several types of this virus, but it is comforting to know that the virus that causes colds in horses will not cause colds in humans.

As far as the disease itself is concerned, since we have all had many typical colds in the past, there's no sense wasting space describing symptoms. The disease is spread by people who have the cold, coughing or sneezing infected droplets into the area at large. It can also be spread by handkerchiefs, kleenexes, eating utensils, etc., that have recently been soiled by the patient. Everybody is susceptible, and there is no immunity to speak of. People in Hawaii get just as many colds as people in Oppama.

But, now that we've caught the darn cold, what can we do about getting over it? Medical treatment has changed for the better since some of you older fellows were kids. In those days, the poor patient was given a large dose of castor oil or calomel. Then he was decorated fore and aft with mustard plasters, given aspirin, foul-tasting cough syrup, nose grease, ipecac, maybe some quinine, then popped in bed, covered by blankets and quilts in a hermetically sealed room. A pot of boiling water containing turpentine, tar asafetida, camphor, and various other stinks filled the room



with noxious steam. And the sufferer was allowed to simmer in his own perspiration until the castor oil began to exert its influence. *(We don't feel so good. – Ed.)* If pneumonia or some other complications didn't set in, the poor patient was shakily back on his feet in about 14 days.

This routine lasted until the discovery of sulfa drugs and antibiotics. All the patient had to do then was pop a few pills in his mouth or submit to one or two needle jabs in the hind-end, and he could go to work (if it didn't include flying). Naturally, his nose ran, his head ached, his joints hurt, and he was gummy mentally, but he didn't have to stay home. (Of course, he also infected everybody within sneezing distance.) Under this form of treatment, complications were infrequent, and the patient was usually over it in 2 weeks.

Now, the healers are getting their feet back on the ground again. We know that the current wonder drugs have no effect on the cold virus at all. We know that there is no logical reason to assault a guy whose resistance is already low with a further weakening jolt of laxative. Indiscriminate use of inhalers may injure the delicate lining of the nose. And, there is no shot or pill that will provide a quick immunity after the disease has started. Modern treatment now consists of the relief of symptoms. If you feel achy and have a slight fever, aspirin is good. APCs are better. If your nose is running, an inhaler can be used if not too often or kept up too long.

Fluid is good (based possibly on the fact that nobody ever saw a fish sneeze), and it's a good idea to take at least one-half glass of water each hour. To this can be added lemon, orange, sugar, bicarb, or anything else that your grandmother used to use.

Since your resistance was low or you wouldn't have caught the cold in the first place, one very important thing to do is to get in bed. This maintains an even body temperature and provides rest so that your body can more readily combat the infections. Eat if you want, but don't try to jam a lot of vittles down your gullet if it's an effort.

This brings us to the controversial subject of the use of alcohol in the therapy of the cold. It is true that small amounts of J. W. Suntory or Old Barstool will help the body relax. You're not supposed to relax, however, to the extent that you can't get the old chin up off your chest.

The only other method of treatment that hasn't been covered is the *laissez faire* idea – just ignore the thing and maybe it'll go away. There are a number of reasons why this is a poor theory. If you're a tiger, you're more than just likely to get yourself and your metal bird smeared all over a farmer's field. If you're a ground type, you'll feel rotten enough so that your work will have to be done over half a dozen times. And you will probably infect everyone else in the group.

What's the chance of preventing a cold?

Since you'll catch cold only if your resistance is low, the answer is simple: *don't let your resistance get low.* This is done by eating the right kinds and amounts of food, getting the proper amount of sleep, rest, relaxation, and exercise, and not overdoing any bad habits that you may have. Being in a draft isn't going to give you a cold if you are in good shape. Taking cold showers every a.m. isn't going to prevent a cold. Taking a multivite pill won't protect you either, and this has been pretty well proven by many research experiments. As we said above, wonder drugs and shots have no protective power – maybe some day some lucky guy or gal will come out with a definite prophylactic dose, but as yet, nobody has. If you didn't come anywhere near anyone who had a cold, you probably wouldn't get one. But who wants to be a hermit?

So, that's the current story, ungarbled. Most of this treatment and diagnosis you can take care of yourself. If you need APCs, inhalers, cough syrups, etc., your friendly flight surgeon will give them to you – along with a grounding chit.

We will close with these immortal words:

"Don't be half-sick, see your Flight Surgeon!"

USAF PAC FLYER

The flight was scheduled as an airways training/logistics flight to depart Homeplate, make two intermediate stops, and return to Homeplate. There was a crew of four aboard and some passengers. All was routine until the landing at the first stop when . . .

JUDGMENT

THE flight was scheduled to take off at 0530. The weather forecast for the first stop was above minimums, but barely. The PPC opted to let the copilot fly the first leg in the left seat. Departure was 2 minutes early.

The flight climbed to assigned altitude, and those who remained awake enjoyed the beauty of a gorgeous sunrise and the fast-changing sky hues. Enroute weather was good. About halfway, the PPC called a FSS (Flight Service Station) to obtain an update on the weather for their first stop. The weather by then was right at minimums, and they continued.

About 15 minutes prior to their approach, the pilots received another weather brief. It was sky obscured, indefinite 100, viz one-quarter mile, in fog. The GCA minimums for the approach were 100 and one-half. The crew had plenty of fuel, and the PPC advised that they'd shoot an approach and if unable to see the runway at minimums, would proceed to the next stop.

The PPC had over 2000 hours of which 725 were in model. He had been designated a squadron NATOPS instructor and was qualified in all respects. The copilot also had over 2000 hours, but just over 100 hours in model. He

FAILED

was designated PP3P and about ready to take his PP2P check.

The pilots and the flight engineer completed the descent and approach checklists about the time they passed through 2000 feet. The aircraft weight was 98,500 pounds and the approach-flap airspeed was 142 knots. Personal minimums for the copilot, not NATOPS-qualified in model, were 200 feet and half a mile.

The aircraft was handed off to GCA about 15 miles out. The weather was again passed to the crew (visibility was three-eighths) and winds were reported west at eight. The aircraft was flown on glideslope between 147-150 knots most of the way toward the duty runway to the east. The runway was sighted between one-half and three-quarters of a mile at 200 feet MSL. The *Orion* was slightly above and slightly right of course and correcting. The GCA controller reported them at decision height and issued missed-approach instructions.

The PPC reported the field in sight, and the copilot lined up on runway centerline. The GCA controller saw the aircraft level off momentarily and then descend to land. The P-3 was still airborne (estimated at 50-100 feet) when it passed the 5000-foot remaining marker. It disappeared from tower view with 4000 feet remaining – still not on the deck!

The *Orion* touched down between 2500-3000 feet remaining, downwind, on a wet runway. Both pilots thought they had 5000 feet remaining. After touchdown, max reverse was applied and moderate braking. When the PPC saw only 2000 feet remaining, he assisted the copilot with max reversing and max braking. It wasn't enough!

The P-3 continued straight ahead on runway heading, slid down a 20-degree slope on the overrun, crossed a perimeter road, and nosed through a boundary fence. A pilot at the end of the runway, awaiting clearance to take off in the opposite direction, called the tower and reported the P-3's plight.

Meanwhile, the crash crew had seen the aircraft touch down, knew there wasn't enough concrete remaining to stop, and roared off toward the end of the runway – before any word was received from the tower. The crash crew arrived on the scene quickly, just as the last of the crew and passengers got out of the aircraft and assembled aft. No fire broke out.

The nose gear had collapsed upon impact with the fence, and there was a steep forward slope as the crew and passengers deplaned. One passenger cracked his heel when he jumped from about 10 feet to the hard pavement. All the rest were okay.

Later, in reviewing the events which led to the mishap, some peculiarities came to light. During the rollout the aircraft did hydroplane. Every sequence report put out by the station after midnight included a remark "wet runway." Yet, despite plenty of time between handoff to GCA and touchdown, the pilot didn't ask about the condition of the runway, nor did GCA volunteer that the runway was wet. Winds had been easterly between calm and 5 knots for hours. However, at 0500 the wind swung around to the

west, same velocity, and remained westerly until midafternoon. The GCA unit was set up for the east runway, and was to be changed immediately after the P-3 landed.

Now let's direct our attention to what went on, or didn't go on, in the cockpit. When the FSS reported the weather at minimums, the PPC had a chance to trade seats or shoot the approach and landing himself, from the right seat. He elected not to do either. Thus, badly needed pilot expertise was compromised under conditions which required an expert.

One questions the action of any PPC who would permit a non-NATOPS-qualified pilot to have the controls under the conditions. An approach to minimums requires the ultimate in technique; not almost on the glide slope, not almost on speed, not just a tad high. It requires everything to be on the money. There were passengers aboard whose lives depended on the best-qualified pilot at the controls. There may be some readers who will take exception at this by asking how 3Ps are supposed to get experience? There's an easy answer. They become experienced during training flights by observing and taking their turn under progressively demanding conditions, and *with close supervision.*

In this mishap, the PPC had another chance to assume control when they broke out and when he realized the aircraft was high and right (and probably fast). He knew the runway was not a long runway – only slightly less than 6000 feet – but he sat there and took no action. The PPC was programmed to land and ignored the alternative of a waveoff which was the safest maneuver.

There have been many articles in APPROACH on the subject of a pilot in command *not being in command.* When will we ever learn from the mistakes of others? ◄

A Pilot's Pilot.

Maj N. A. Collyar was the pilot of an AV-8A on a section, conventional takeoff when he felt an unusual airframe vibration, followed by a port wing drop. Quickly he lowered the nozzles to make an immediate takeoff. When he picked up the gear, he had an unsafe port outrigger and main indication, and the hydraulic caution light illuminated.

Maj Collyar's wingman moved in and took a good look and advised that the outrigger had been driven through the wing and that hydraulic fluid was streaming from the area. The landing gear was selected down normally but did not lower, so it was blown down pneumatically. All gear indicated down and locked.

The wingman reported the port outrigger was trailing at a 45-degree angle. An emergency was declared while the pilot flew to altitude to dump fuel. A satisfactory slow flightcheck was made, and then Maj Collyar returned to base and executed a soft, vertical landing. The aircraft touched down and gently rolled port, finally resting on the port outrigger and a captive AIM-9 on station one. The aircraft was secured and the pilot climbed out.

A near disaster was averted by Maj Collyar's correct diagnosis of the problem on takeoff and his airmanship in landing. The presence of a wingman helped immeasurably in determining the severity of the problem and prevented Maj Collyar opting to make a roll-on landing – which could easily have been fatal under the circumstances. Well done.

BRAVO ZULU

Capt Madison C. Chisum and his RIO, 1stLt Fred C. Nolte launched as No. 4 in a four-plane, F-4, trans-Caribbean flight from MCAS Beaufort, SC to NS Roosevelt Roads, Puerto Rico. The flight involved inflight refueling, which commenced southeast of Miami, enroute to Puerto Rico.

Rendezvous and plug-in were uneventful. However, after 10 minutes, Capt Chisum's aircraft began to vent fuel excessively from both the wing area and fuselage vent masts. Immediately disengaging, Capt Chisum asked his section lead, Maj K. W. Dewey and Capt D. D. Tyler (RIO) to visually check his aircraft. Almost simultaneously, 1stLt Nolte noticed fuel coming from the entire upper fuselage area. The section lead confirmed the situation and an emergency was declared. Capt Chisum immediately depressurized the fuel system to lessen fuel loss. Also, realizing the danger of fire, he secured the bleed air system. Both he and 1stLt Nolte briefed and prepared for ejection in the event of fuel starvation or fire.

Initially headed for Homestead AFB, Capt Chisum calculated that at the present rate of fuel loss, a divert to Homestead was out of the question. He informed his section lead of his situation and intentions. Maj Dewey and Capt Tyler requested vectors from Miami Center to the nearest land, and SAR alert. Miami Center immediately provided a vector to Freeport International Airport, in the Bahamas. Already thoroughly briefed on all divert fields enroute Capt Chisum was able to make an immediate decision to accept Freeport. He jettisoned his centerline tank and commenced a descent to Freeport. Maj Dewey and Capt Tyler continued to chase Capt Chisum's aircraft, providing navigational assistance and radio relay.

Fifteen miles from Freeport, fumes began seeping into both cockpits. With the field in sight, but unable to establish UHF communications with Freeport Tower, Capt Chisum made a 270-degree entry to the field, making certain that the runway and traffic pattern were clear. A successful landing was made, despite heavy fumes and seeping of raw fuel into the cockpit.

From the start of the emergency to the landing at Freeport International Airport, a total of 10 minutes elapsed. During that time, Capt Chisum's aircraft had lost over 9000 pounds of fuel, testimony to the catastrophic failure of the No. 2 fuel cell.

A thorough brief, sound knowledge of aircraft systems and emergency procedures, professional leadership, and coolness that comes from preparation saved a valuable aircraft. Flight discipline and a thorough grasp of the situation enabled Capt Chisum and 1stLt Nolte to make a sound decision that produced the right result. Maj Dewey's accurate assessment and strong flight leadership, and Capt Tyler's timely navigation and communication turned a potential disaster into a smooth, uneventful recovery. Two lives and an expensive aircraft were saved. Well done!

An outstanding show of professionalism by the entire flight. Also to be included in this BZ: Miami Center. — Ed.

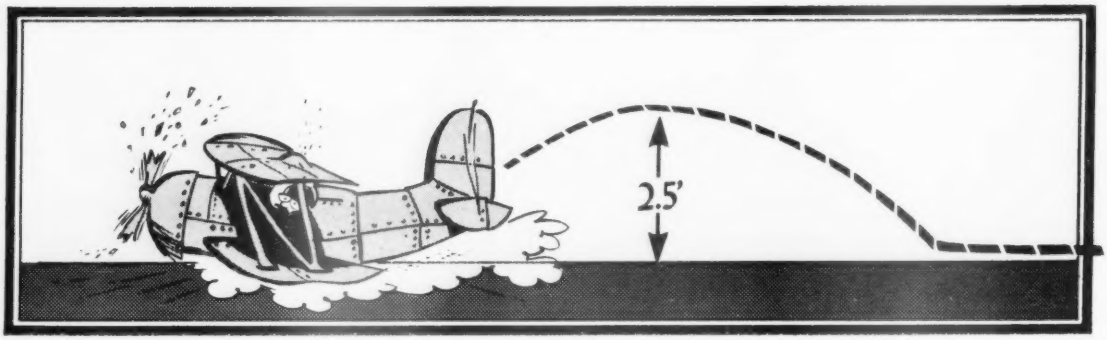
Left to right Capt M. C. Chisum, 1stLt F. C. Nolte, Capt D. D. Tyler, and Maj K. Dewey.

GREAT AVIATOR

Speed Ring

THE Late, great Speed Ring, was one of our early daredevils of the air. He broke several air records during the late 30s, a few hearts and some noses – in that order. He was best known for his rapid taxiing, takeoffs and climbs. "Partner," he used to whisper, "I ain't got no time for the checklist and other frivolous things 'cause it's my nature to do things fast!"

While performing an outside reverse Immelmann with a snap roll at the top, he fell from his aircraft due to his failure to fasten his lapbelt and shoulder harness. Speed's remains are buried in Minneapolis, St. Paul, Milwaukee and Peoria for those of you interested in paying homage to this great ace.



B. D. C. Fox-Brown

GOING back a few years, old timers will recall the exploits of that early RAF ace and backyard inventor, B. D. C. Fox-Brown, who developed the gas-driven, nonreturnable boomerang. Concerned about the effects of gamma radiation on pilots, he covered a 1929 Puss Moth with lead and commenced flight testing in the spring of '31. When the craft rose only 2.5 feet after the seventh attempt at flight he abandoned his project as a failure. However, he did prove once and for all the irrevocable axiom that what goes up must come down. (Plane taxied well.)

S I HAVE KNOWN

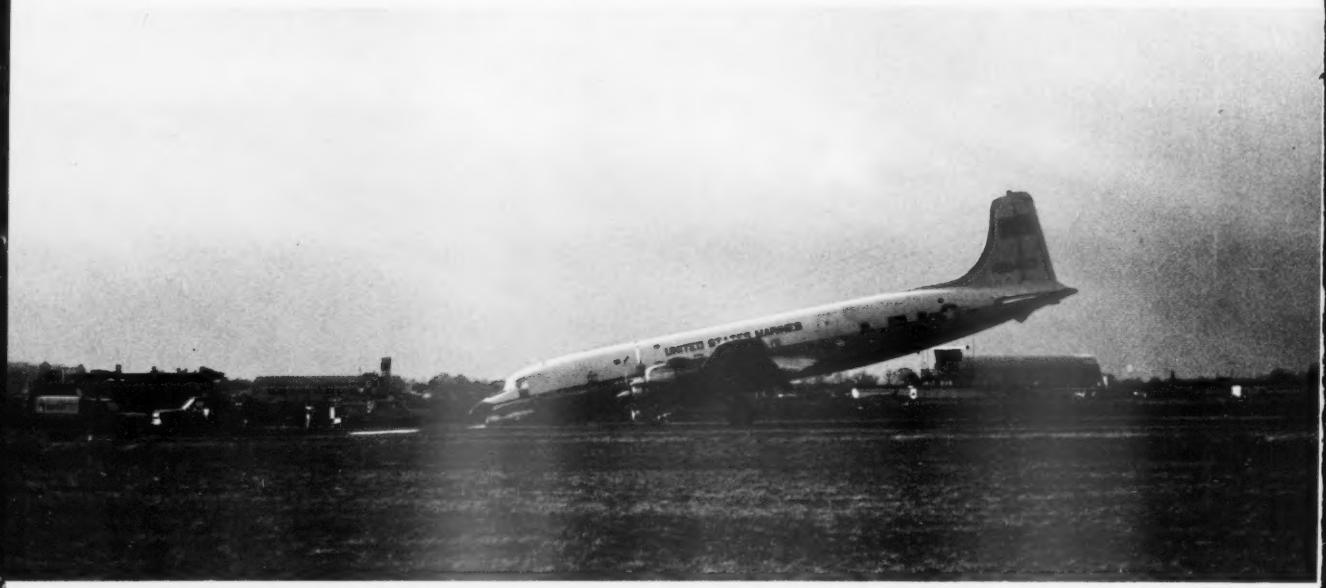
LCDR Red (Nose) Rudolph

REMEMBER LCDR Red (Nose) Rudolph whose cry of "Gear down and welded" was a familiar reply to the challenge of all west coast GCA operators? Red had so many gear-up prangs that the airframes chief welded the wheels of his XR-50 in the DOWN position. Red's motto was "Low and Slow." He was true to his word as the Puget Sound Power and Light Company found out the night he blacked out the Olympic peninsula. He dragged his wheels through the high tension wires at Grand Coulee and caused the main bus to fuse with the Northern Pacific railroad at the Wenatchee freight yards.

Boris Crashenburnovich

WHO can forget the famous aeronaut Boris Crashenburnovich who pioneered over-the-shoulder ASW weapons delivery. Boris' plan called for a low altitude run-in with a steep pull-up and release of the weapon as the nose passed the horizon, with the aircraft inverted. Having miscalculated the ballistics of the weapon, Boris' plan failed when the weapon passed through his propeller thus making further flight doubtful. However, all was not lost since Boris' flying machine was also testing a vodka-powered engine. The plane crashed in a tomato patch near the town of Schmirov and Boris is credited with inventing the Bloody Mary as a result.

Anyone have a clue?



ATTENTION all aeroengineers, experienced C-54/118/130 pilots/maintenance experts, and former naval aviators. Here's a short story involving a C-118 that so far has defied explanation.

A C-118 was preflighted, and no discrepancies were uncovered. The crew manned the aircraft for a bounce hop. After all engines were started, the pilot received clearance to taxi out for takeoff. During taxi and the takeoff roll, there were no adverse indications – no dragging, no shimmy, nothing.

After becoming airborne, the gear was raised and an unsafe nose gear was noted in the landing gear position indicators, but shortly the unsafe gear light went out. The pilots stayed in the pattern and the radio operator took a look at the nose gear through the drift meter. The nose gear door was closed.

The pilot called the tower and requested a full-stop landing. The landing checklist was completed (hydraulic pressure normal) and a full-flap landing ensued. Touchdown occurred at the 8000-foot remaining marker. The nosewheel was lowered to the runway, yoke control was passed to the copilot, forward pressure was applied, and the command "reverse bar out" was given. Throttles were at the flight idle position.

Before props could be reversed, the gear warning horn sounded and simultaneously the nose settled to the runway. Number 2 and 3 props contacted the runway with 6300 feet remaining. The No. 3 prop spun off and came to rest at 5700 feet remaining. The aircraft continued to slide down the runway until all motion ceased at the 4800-foot remaining position – just a bit right of centerline. The aircraft was secured and those onboard left by the crew doorway.

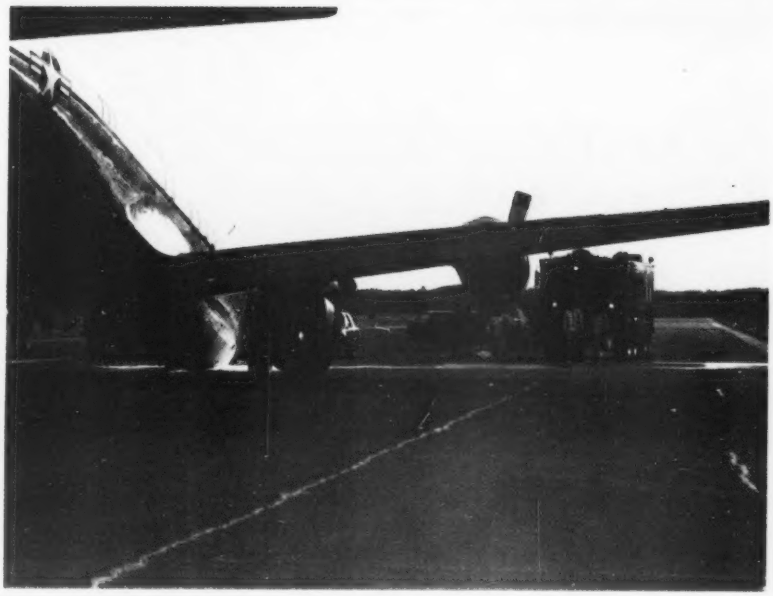
The cause of the nose gear collapse could not be determined. There were no pilot or supervisory errors, and there was no maintenance error involved.

The nose section was raised on the runway, and the nose gear assembly dropped to a down and locked position. The aircraft was towed to the hangar after the gear was pinned. Detailed investigation of the nose gear assembly revealed proper sequential functioning. Multiple cycling by the normal gear handle and normal hydraulic system disclosed no system malfunction, misalignment, or restriction. Microswitches were OK. The overcenter spring bungee pressure was within normal limits. There was no evidence of damage to the downlatch knee assembly where a piece of FOD could preclude the assembly from going past center. A

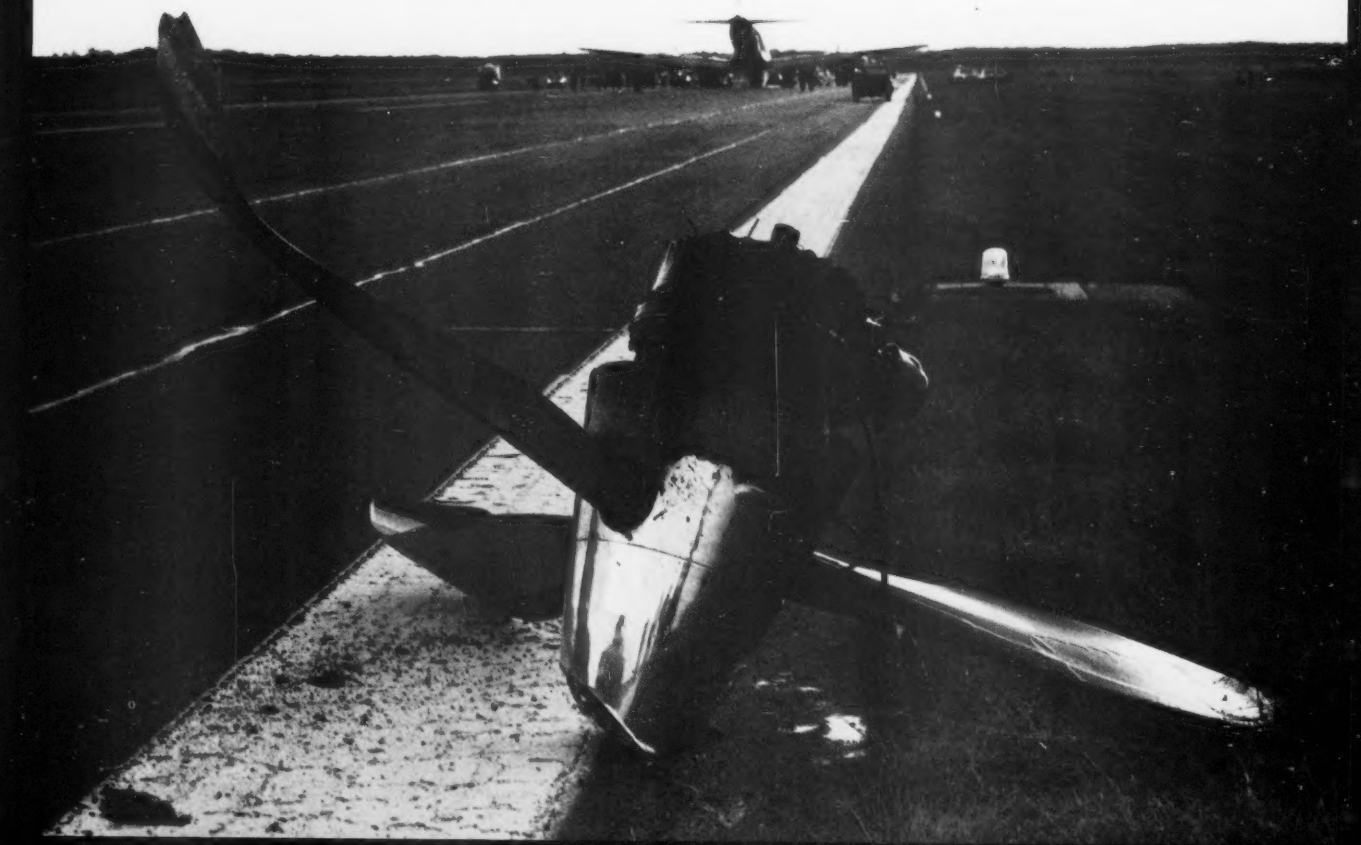
DIR of all these components revealed absolutely nothing.

One last possibility was considered. Could a member of the crew inadvertently have jarred the nose gear to an unlocked position? Hardly. There had been only a momentary unsafe light indication when the gear was raised, and the light had gone out when the gear was dropped. All of the crew were extremely conscious of positive gear down indications.

The most probable cause of the mishap is that a piece of FOD precluded the nose gear from locking over center and at the same time contacted the downlock microswitch so as to give a safe gear indication in the cockpit.



Anyone want to comment?



Anymouse

Clobbered

I WAS part of a helicopter detachment aboard ship. We had been working on our CH-46, and after all maintenance work had been completed, we were attempting to fold the rotor blades. Although the forward alignment marks were matched, the rotor lock failed to engage.

One of our troops climbed on top of the aircraft and manually misaligned the rotor system, so that an attempt to automatically position and fold could be made. After misaligning the rotor, the crewman was instructed to get down. He crouched down on the forward port work platform. The director, noticing the crewman disappear, signaled a man in the cockpit to attempt to fold the blades.

Simultaneously with the director's signal the crewman stood up on the platform and began moving aft – alongside the sync shaft cover. The director was forward on the starboard side and couldn't see the crewman. The rotor fold system began to position the blades and one struck the crewman, knocking him off the helicopter to the flight deck. The crewman fell 9 feet and landed on his heels, incurring a fracture.

Proper supervision by the director or adherence to established procedures by the crewman should have prevented this needless injury and loss of man-hours. There was no reason for the crewman to remain on the platform after he was told to get down. – nor was there any hurry for the director to give the fold signal before he moved over enough to make sure the crewman had descended. I think all directors should be aware of the location of everyone under his control before giving an order to move an aircraft or exercise any aircraft systems.

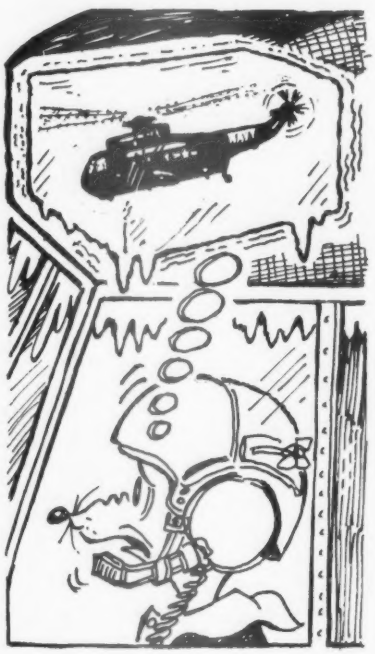
Shookmouse

Probable Icing

We were on the fourth leg of a ferry flight from MCAS Yuma to NAS North Island in our helicopter when I realized I couldn't stay in VMC over the mountains.

I filed an inflight IFR plan with Los Angeles Center, and we were told to climb to 8000 feet. We had been at 6000. When we reached 8000 feet, we were flying in and out of clouds, and the outside air temperature was -8°C.

I noted ice beginning to form on the lower right windscreen. Soon after that we heard a buzz and experienced



The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

REPORT AN INCIDENT
PREVENT AN ACCIDENT

a severe one per revolution vibration. It was very uncomfortable. The helo began a steady left roll to about 30 degrees angle-of-bank, and our altimeter began to unwind.

I continued a left, descending turn to a clear area and figured we must have experienced blade stall. The vibrations made it impossible to read the heading and altimeter gages. However, we broke out of the clouds, and ground lights helped us to orient ourselves. Within a few seconds the vibrations ceased. We diverted to El Centro after telling Center about our problems.

The most probable cause of the severe vibrations and erratic flight performance we attributed to blade stall. Whether the blade stall was from icing on the main rotor blades, or from an airspeed in excess of the normal operating limits, or a combination of the two, we'll never know. We were flying at 120 knots, and our estimated weight was 10,000 pounds. That was right at limits.

Ice formation on the windscreen could also have been an indication that the main rotor blades were beginning to ice up, which would have reduced the blade stall margin. All I know is that by descending to a lower altitude (outside air temperature was +6°C), it's possible that any ice accumulation on the main rotor blades was sloughed off.

Our weather brief at Yuma for the mountains was E70 broken, 30 miles visibility, temperature 52, winds 250/10. There had been no mention of icing in the clouds or turbulence. I've flown in the area enough to know that icing in clouds, particularly at night, is a possibility.

The people I talked to think the blade stall was a combination of icing and exceeding normal operating limits. I hope this report will benefit all helo pilots. When you have to fly at altitudes at or near freezing levels, it might be best to alter plans accordingly. Everyone knows that flight in icing conditions is a no-no. Please . . .

Itwasclosemouse

HIFR Emergency

OUR crew was flying a HIFR (Helicopter Inflight Refueling) mission in the SH-2F one morning when the main gear box oil pressure light illuminated, with a corresponding drop in pressure to 20 psi. Now that calls for a high pucker and immediate action.

The pilot disconnected quickly, declared an emergency, and was permitted to make an immediate precautionary landing on the frigate. Marginal clearance exists on this type frigate with no rotor blade overhang in the event of droop stop failure. The reason for landing here was that the nearest available deck was aboard another ship 40 miles away. The ship from which we were refueling had its helo hangared.

Our pilot eased into a landing athwartships, aft of the hangar. The helo was chocked, chained, and shut down. After touchdown, the low pressure caution light went out and the oil pressure returned to a normal 40 psi. Later, a 15-minute ground turn was made and all temperatures and pressures were normal.

The two ships closed each other and when about a mile apart, we took off and flew to our home away from home. After a routine landing, troubleshooters checked thoroughly, could find no damage, and all systems operated OK. We think a main gear box relief valve must have stuck open.

The unique emergency landing we made is not recommended under all conditions. We had everything in our favor – ideal weather, smooth seas, and an experienced pilot. We had discussed this emergency in our detachment "What If" NATOPS sessions.

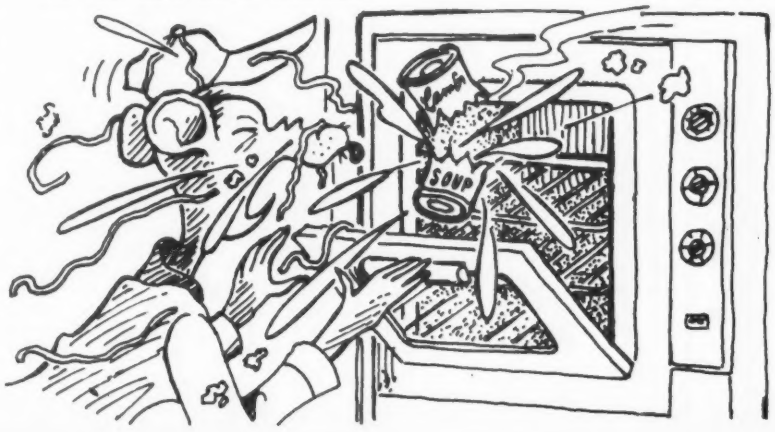
Refueledmouse

Bombed

DURING the last few months we've had two separate incidents of unopened soup cans exploding. One involved a rather senior person who heated an unopened can in the oven of the P-3. These incidents make it very apparent that common sense does not always prevail, and something should be done to reduce the possibility of someone being seriously burned or otherwise injured.

To this end the ASO feels a sign should be stenciled in the vicinity of the oven, warning users of the potential dangers of not opening canned foods prior to heating in the oven.

VP Safetymouse



GIMME AIR

The aircraft was descending, but he could do nothing about it.

AN aircraft launched, as Dash 4 in a division, on a 6.5-hour tanking mission. After 3 hours at FL350, the pilot removed his mask for a drink of water. (Cabin altitude was 20,000 feet.)

Upon reinstallation of his oxygen mask, the pilot noted a rapid lox supply dissipation from 6 to 2.5 liters, and he also discovered he could inhale with the lox switch secured. Further troubleshooting revealed a 110-degree radial failure at the base of the mask assembly – just above the hose assembly.

The pilot notified his division leader and with a buddy made an immediate descent to below 10,000-foot cabin altitude. They returned to base low level. Due to the pilot's early recognition of the problem and the quick descent, he didn't suffer hypoxia. Others can avoid a similar experience by preflighting their flight gear prior to each flight and carefully checking the stressed mask connection.

In the same vein, another pilot strapped into a fighter for a functional checkflight, prior to the aircraft being converted to a drone. All checks were normal, and the takeoff was made with the oxygen in the diluter demand position.

Passing through 13,000 feet, the pilot felt the onset of hypoxia. He last recalled switching to 100 percent oxygen. Next he remembered straining as in a high-G maneuver to retain consciousness. He knew the aircraft was descending and turning, but he couldn't do anything about it.

He estimated he was unconscious anywhere from 30 to 40 seconds, his vision was blurred, he couldn't see the gages, nor could he see or recall where the canopy jettison handle was located. He thought about ejecting, but his mind refused to function – he couldn't raise his hands to reach the handles.

Consciousness slowly returned and he found himself at 5000 feet. His first impulse was to punch out, but he found he had control, so he stayed with the aircraft. Heading toward the field, he had to climb to establish communications. When he did, he felt a recurrence of hypoxia, so he ducked back down. His mind was now clear, and he knew what he was doing. He forced himself to reposition switches, ran through his prelanding check, talked to himself about airspeeds and altitudes, and convinced himself he was mentally and physically fit to land.

He was.

Later, a check revealed his oxygen system consisted of 99 percent nitrogen! Oxygen servicing procedures had been violated. The system had been filled with nitrogen to leak check the system and not reserviced with oxygen – nor was the aircraft tagged or a servicing entry made. Prior to the test flight the plane captain, during a preflight inspection, noted 200 psi, which was within limits for flight.

Had the pilot's mask fitted tightly he might not have survived. Luckily for him, it was found he was sucking more ambient air than nitrogen and was able to recover. The entire system of maintenance checks and balances went down the drain because of a lack of documentation and supervisory management. ◄

Most of the following article is written in Odomese as opposed to Coast Guardese. When reading Odomese you, the reader, should place your tongue firmly against one cheek. Cheek selection is at your option, but the selection should be made carefully. An incorrect decision and a misplaced tongue can sometimes lead to aggravations.

Checklists and chowboxes

By LT John "Bullet Bob" Odom, USCG
Coast Guard Station
Elizabeth City, NC

THERE has been a great deal of talk in the C-130 community for years concerning the correct terminology for those big, black retractable rollers. Ever since an Air Force Major said "Cheer up, Charlie", and the landing apparatus was raised on the takeoff run, the term gear has been as verboten as George Carlin's seven dirty words. History seems as fickle as the people who make it. Just suppose that the term for the rollers had been wheels and that infamous Major had said "Why don't you put your heels up and relax, Charlie". Where would we be now? The much maligned term gear would probably be as vogue as the term wheels. Gear – Cheer/wheels – heels, the real problem is not so much terminology as just plain professional cockpit communications.

As military people, we dearly love the art of taking unbelievably long titles and shortening them into neat little many syllable words. The acid test for having arrived is knowing what these tongue twisters actually mean. This situation is just fine for the staff officer, but it has no place in the art of flying.

The C-130 community, that same community where you never mention the term gear except in the privacy of your bedroom, now has a new source of communications irritation. We actually have pilots asking for a BLP, which sounds strangely similar to BLT. The frustration that a new scanner must go through rummaging through the chowbox looking for the bacon and pastrami (we always have the lettuce) is needless. There we sit in the front standing by for a response from the scanner on "The Before Landing Pattern Checklist" and he is madly tearing through the chowbox.

Charlie is happy and well adjusted these days, he hasn't had a problem with the rollers in years. The scanners on the other hand, are getting old at 20 and now most have police records since their paranoia for chowboxes has manifested itself into physical harm for Coast Guard cooks. Please save the scanners and the cooks and either order pastrami and bacon as supplements to your ration components or call for the "Before Landing Pattern Checklist".

You can take your tongue out of your cheek now. I am certain that you can detect my decided dislike for dry, technical verbage. I now must regress, however, into the serious.

Checklists are provided to us professionals by other professionals for a number of reasons. They can assist in keeping all of us out of difficulties only if they are used with as much absolute exactness as we can muster. Checklists, like any other tool, are of great benefit if properly used, but like the misplaced hammer, if improperly used, they can inflict a lot of needless aggravation. ◄

Checklist Complete

By AWC Ralph A Beaty, HS-4

IT started out as a routine flight (if you can call a NATOPS check routine) in the SH-3 helo with four on board. It was a double check ride in that the pilot and crew were both being checked. The squadron NATOPS pilot was being checked in the right seat, the RAG NATOPS evaluator was in the left seat, and the crewman was being checked by the squadron NATOPS aircrewman.

First entry into a hover and dip was smooth and uneventful. No emergencies were simulated until we were sure the systems checked out 4.0. The second dip was full of aircraft and systems emergencies simulated by the pilot and crew.

The evaluator was demonstrating the loss of the No. 2 generator when it refused to return on the line. Our simulated emergencies stopped while we talked over the real one (No. 2 generator failure). We considered continuing the flight due to the proximity of Homeplate. After deliberation, we concluded it best to return to base.

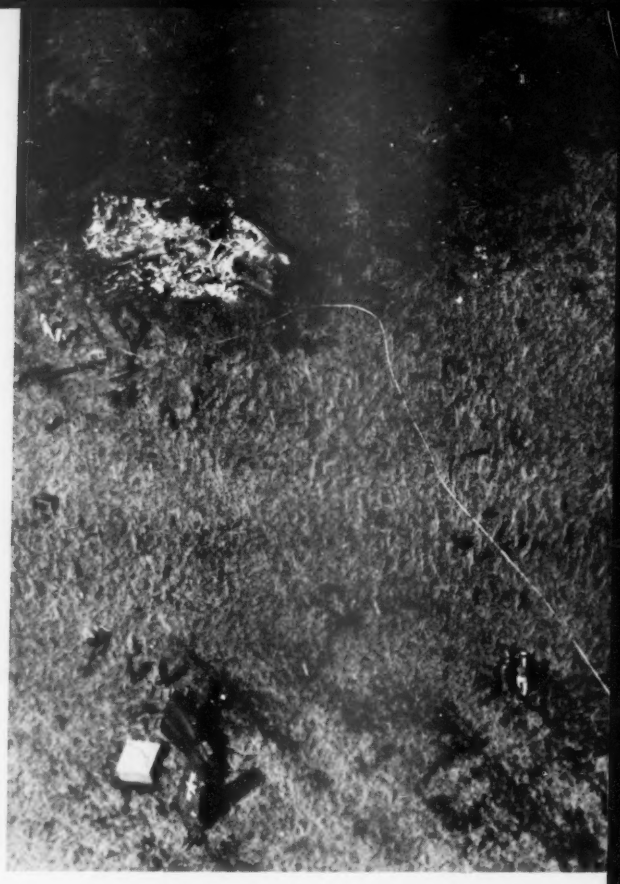
Sonar was secured, the landing checklist was completed, and a normal landing was accomplished. After turn off of the duty runway, ground control informed us that we were dragging something under the aircraft.

It hit every one at the same time. The dome! During the confusion of the generator loss and the discussion over whether to land or to continue it was never seated.

Routine took over on the landing checklist, allowing complacency to strike. The crew checklist calls for visual check of dome seated. The crewman glanced back and called checklist complete. He thought he saw it seated. The NATOPS crewman had faith in the reliability of the crewman and didn't double check. All hands just forgot and due to routine, assumed all was complete. The tower either didn't notice or was not familiar with the landing configuration of the ASW H-3 and did not inform us of the dome at trail.

There was no excuse for this mishap. Proper use of the checklist, or proper crew coordination, or a heads-up tower operator would have prevented it. There was plenty of time and the emergency was not that demanding. It only proves, once again that complacency is our number one enemy. All of us, no matter how proficient or how checked out we are, have to continually fight it. We must do all we can to eliminate complacency. ◄

COLLECTIVE BOUNCE



A CH-53D was manned by a crew of four to participate in an external lift and confined-area exercise. The briefing before the flight was thorough and the weather was good. The HAC carefully covered maneuvering, inflight external techniques, and emergency procedures.

The HAC was an experienced head and his copilot was a nugget learning the ropes. They reviewed the yellow sheets and no discrepancies were noted. The crewchief and the pilots conducted a careful preflight inspection and were satisfied their bird was ready to go. A fourth member of the crew was aboard as an observer.

The HAC conducted a crew brief before departure and emphasized proper hookup techniques among the flightcrew and two others who would be making the hookups. When ready, the HAC took off and they flew to the external load area to discharge the hookup crew. The copilot was given the controls after becoming airborne, flew to the dropoff point, and made a routine landing.

The helicopter then launched with the copilot at the controls, picked up a concrete block weighing in excess of 11,000 pounds, and climbed out of the zone. His first approach was on glideslope, but a tad fast. The HAC coached the copilot to use the proper nose attitude to establish the correct closure rate, and had to remind the copilot not to be rough on the controls.

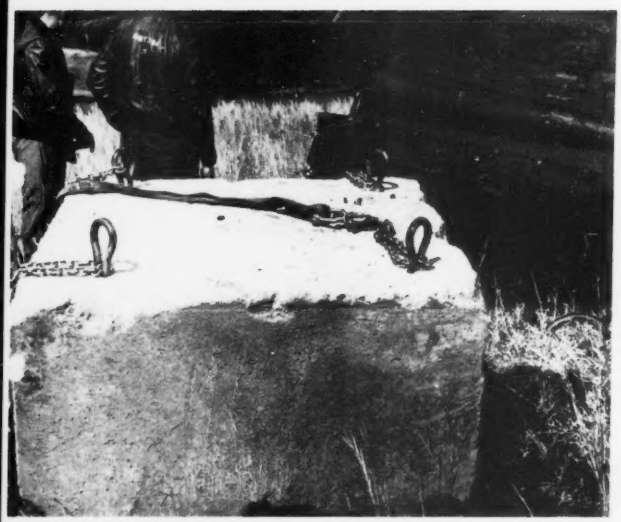
As the copilot entered a hover, he induced collective bounce. The HAC put his hand on the collective and told the copilot to freeze and to slightly lower the collective. The bounce stopped. The load was dropped, picked up again, and the copilot flew another pass. Once more as he eased into a hover, collective bounce began. This time the HAC talked the copilot into stopping the bounce without getting on the controls.

The HAC took over and flew a demonstration pass. Approach, hover, and drop were normal with no sign of collective bounce. Control was returned to the copilot who flew a good pass, lowered the load to the ground, but didn't release it. They then departed the external practice area and proceeded to the confined area to complete the flight.

The HAC entered the pattern and demonstrated desired lateral distances, pattern altitudes, glideslope, rate of descent, and closure rate. He discussed the critical portion of the approach (loss of translational lift) and what they would do if an engine failed at that point. The HAC entered a hover, allowed the external load to touch the ground, and then demonstrated a hover transition to an obstacle-clearance takeoff. Once airborne, he asked the copilot if he had any questions. The copilot had none.

The copilot assumed control, flew a good pattern, and made a fair approach – a little high and fast – and terminated in a 50-foot hover. Collective bounce was felt again, but the HAC stopped it while explaining what the copilot was doing and why.

On the next approach, collective bounce was induced but this time it couldn't be stopped. The HAC took control late, froze the collective, and gave the order to pickle the load. However, the bounce became extremely violent and the helicopter went out of control. The HAC lowered collective and tried to move right to keep from settling on the concrete block. The helo hit the block and the ground



in a right skid, bounced into the air, spun one way, hit and bounced once more, spun the other way, hit for the last time, and rolled over on its port side.

The crewchief and observer were thrown out of the helicopter during the gyrations. Neither had on a gunner's belt. One survived. In the cockpit, the HAC secured the switches. He released his straps, after yelling to the copilot to get out, fell across the cockpit onto the window, and crawled out. The copilot followed. They both got on their feet and hollered for the crewmen. One answered that he was OK and when questioned about the other crewman replied that he had been killed. The helicopter was on fire, so they moved away. The copilot remained with the wreckage, but the HAC and surviving crewman walked out to a highway and flagged a passing vehicle to go get help.

Collective bounce is a phenomenon known to Vietnam CH-53 pilots but for whatever reasons has never been well-reported. It is a condition in which the collective is

displaced, usually by rapid/rough movements, to cause the collective to move out of phase with the helicopter's vertical, oscillatory motion. It usually occurs during an approach to a hover with a heavy load (internal or external). A pilot attempting to correct this condition, by holding the collective with the COLL TRIM REC switch depressed, may inadvertently increase the amplitude of collective bounce with the possibility of the helo motion becoming divergent.

NATOPS, as a result of this accident, now addresses collective bounce:

"Pilot control inputs in a hover, or transitioning to or from a hover at high aircraft gross weights may result in pilot induced vertical oscillations known as collective bounce. The initial abrupt control input produces a vertical jump in the rotary wing that is transmitted to the airframe. An abrupt uncontrolled movement of the pilot's arm in reaction to this bounce moves the collective and another bounce is transmitted to the airframe and the sequence is repeated in increasing intensity. This action/reaction is aggravated if the collective trim release button is depressed. Delayed pilot response in eliminating these oscillations may *result in aircraft damage and/or uncontrolled flight.* Smooth coordinated control inputs should prevent collective bounce. If encountered, engaging collective trim or otherwise damping pilot body movement inputs to the collective will eliminate collective bounce.

"CAUTION – During external lift operations if collective bounce is encountered and cannot be controlled, jettison the lift." ◄

"Yo-Yo 1, close it up. It looks like we'll enter IMC. I don't want to lose you." Within a few seconds, two CH-53s were involved in . . .

A NEAR MID-AIR

Yo-Yos 1 and 2 were flying a night tactical formation flight with No. 1 as lead. The two CH-53 helicopters were cruising at 1000 feet, following a coastline when the pilots prepared to turn right for a landing. Yo-Yo 2 was on the right wing and turned first, followed about 5 seconds later by the lead.

During the turn, the crew chief of Yo-Yo 1 yelled that Yo-Yo 2 was coming toward them. The position lights on Yo-Yo 2 (some not illuminated) made it difficult to determine his direction, so the copilot of Yo-Yo 1 made a sharp left climbing turn. They were not about to collide, but the evasive action by Yo-Yo 1 was correct. The HAC of Yo-Yo 1 took control, regained sight of Yo-Yo 2, and continued turning to effect a rendezvous.

At the time, they were in VMC, but the new leader wanted vectors from Approach Control to climb above a low cloud layer. Yo-Yo 1 was asked to close it up and added a few knots to get closer. He remained on the left wing because the helicopters had reached an area with mountains to the right.

The flight continued toward Homeplate. Lead made another call to Approach Control which Yo-Yo 1 did not receive. Lead was still worried about entering IMC and the possibility of losing contact with Yo-Yo 1. For sure, he didn't want the section to have to break up in the clouds.

The HAC of Yo-Yo 1 looked down at the gages for a second to ensure they had a TACAN lock-on and to check the bearing and distance. As he looked back at lead, he saw lead start a climbing left turn into Yo-Yo 1. Lead was almost immediately on top of him. The copilot (in the right seat) recognized the imminent collision simultaneously with the HAC. The two of them pulled into a 35-degree pitchup and *passed over Yo-Yo 2.* How close? Just about 25 feet. The big CH-53 shuddered and buffeted, and some lights flashed momentarily on the caution panel, but the HAC leveled off OK.

When their breathing became normal again, their hearts returned to their chests, and they learned that the crew chief was all right, Yo-Yo 1 told Yo-Yo 2 to fly a steady heading so he could turn left and get back into position. Yo-Yo 2 didn't even know that they had almost collided and assumed Yo-Yo 1 was still somewhere behind him in position.

Fortunately, neither aircraft was damaged and no one was injured. Although there's no requirement to call before maneuvering, it would seem prudent for pilots to do so at night. To say the least, visibility from the cockpit of the CH-53 is not the best, and wingies would appreciate the warning. ◄

NO ONE BOTHERED

THE tail rotor was damaged and had to be replaced. The tail rotor output quill, 90-degree gearbox, 42-degree gearbox, three hanger bearings, and five tail rotor drive shafts all had to be replaced. Over 40 man-hours were required to repair the helo, and the cost of repair parts was in excess of $11,000.

What happened? Well, it went something like this. The aircraft was No. 4 in a flight of six gunships assigned to escort a dozen troop carriers on a night troop lift exercise. The weather was VMC and the flight was proceeding to an unlighted, unmanned LZ (landing zone). The LZ consisted of a hard-surfaced pad in an open area, but the pad alone wasn't large enough to take the entire flight, so the aircraft flew individual approaches and landed three abreast.

After the first several helos had landed, the entire landing zone went IMC due to thick dust stirred up by the early birds flying over the unpaved area on their final approach. The pilot of No. 4 escort began his approach to land in the starboard column, but had to zig left when his copilot, in a voice several octaves higher than normal, mentioned there was a powerline in the way. Then on final, the pilot again had to zig left to avoid overflying troops who were pouring off the first troop carriers to land.

The pilot successfully negotiated the first couple of hazards and breathed a sigh of relief when suddenly he saw a communications terminal box dead ahead of him. He turned right to avoid it and entered a hover. However, his problems were not yet over.

While in a 5-foot hover, his tail rotor struck a windsock pole which had no windsock attached. It was a 2-inch diameter pipe sticking up 7 feet in the LZ. The pilot passed control to the copilot, who had better visibility, and the helicopter landed and was shut down.

The next morning, all sorts of dangers to flight were evident. In addition to the windsock pole, there was the terminal box (5 feet high), trucks, troop tents, telephone lines and poles, all in the approach corridor. *None of these hazards had been briefed before the exercise began,* and naturally none were lighted.

A couple of the squadron heavies launched to see firsthand what the others had to contend with the night before. They found that on short final, the terminal box and windsock pole completely disappeared in dust and the landing zone conditions became instant IMC. The copilot could see well enough to land, but could not see the obstacles in broad daylight!

It is apparent that the planners of this *training* exercise were casual in their preparations. Obviously, safety considerations were overlooked and it was only by luck that tragedy was avoided. ◄

Letters

Re: "Why Are the Reserves Safer?"

Pt. Mugu, CA – After 21 years in the Naval Air Reserve, it was a pleasure to read "Why Are the Reserves Safer?" in the AUG '78 issue of APPROACH. For years the Reserves have flown vintage aircraft (remember the old P2V-4's being dragged out of the desert for us to fly during the Berlin call up?) and have continually maintained a high safety record. Bravo to your staff writer R. P. Shipman for some long overdue recognition.

I thought I had seen it all, but believe me, the SAR/TAR talent in our helicopter squadron HA(L)-5 here at Pt. Mugu never ceases to amaze me.

ADCS Roger Tully
HA(L)-5 Maintenance Control

MCAS, New Bern, NC – I read "Why Are The Reserves Safer?" in the AUG '78 issue of APPROACH with great interest having been a Navy pilot in the VP community both on active duty and in the reserves. It is particularly interesting to note the enlisted crew member experience in Fig. 2, page 3. Unless the situation has changed greatly since I drilled two years ago, this may represent the talent that is available in the enlisted members of a reserve unit; however, they are in short supply. When I was in a drilling unit I was impressed by such talent in the enlisted ranks, although there was always a shortage of enlisted members. Flight crews were short and maintenance personnel even in shorter supply.

Needless to say the enlisted members of the sample crew are not motivated by the monitary return from the reserve program. There is much more talent in the civilian community that is being lost because of the low pay, haircut regulations, and other items too lengthy to mention here.

I hope that we, as a nation, can better develop our reserve program and attract the skilled, experienced, and qualified people that are being lost from this vitally important program. Israel has demonstrated on several occasions how effective a reserve force can be without the high cost of maintaining a full time military establishment. Can't we learn something from them?

Louis Seldon
FAA ARC Specialist

Gaseous Cylinders – Beware!

FPO, New York – The gaseous cylinders used by NATO navies do not have standardized color codes. For example in the British Navy nitrogen cylinders are black, in the U.S. Navy they're grey with a black band and in the Dutch Navy they're painted green. It doesn't tax the imagination much to figure the results during a joint operation when a young Dutch sailor attempts to service his aircraft struts with an American oxygen cart. The fact the threads are left-handed is immaterial. He may never live to know this once he has his greasy fingers all over the cart trying to hook it up.

I recently returned from a short deployment to a French Naval Air Station with a Dutch Naval Aviation detachment. With the complete language barrier (Frenchmen do not speak Dutch or English) plus the color code problem, we had to be VERY CAREFUL what we serviced our planes with.

The disastrous combinations would fill a book if one considers the unique color patterns used by various navies. Some method of standardization should be sought. Most gaseous contents are indentified by NSNs of which no less than 19 nations are participants. This is of little help however to the man on the job. A requirement for NATO code numbers to be painted on all cylinders would provide a common identification mark regardless of color. Unfortunately (to my knowledge) such code numbers do not exist for gaseous contents but for liquids only.

Although it may take years I strongly feel a common system should be established, either through creation of NATO code numbers placed on cylinders or by mutual agreement to a color pattern.

It's surprising to me, as potentially dangerous as pressurized gaseous cylinders are, the NATO countries have never implemented a common identification system.

AMHC Roy L. Leverich, USN
320 Squadron
Marinevliegkamp Valkenburg

Re: Canopy Roll to Disaster

NAS Miramar – After reading "Canopy Roll to Disaster" it seems to me the "Service" is creating a high level of frustration in its RF-4 pilots at the outset. The procedure is simple: 1) Take one young aggressive jet pilot, 2) put him in a high performance aircraft, 3) tell him he can only fly straight, level and fast, and 4) to make sure that's all he does just teach him how to make it go. Talk about unfulfilled expectations!!!

LCDR R. Nebiker,
RVAW-110

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, VA 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

Re: It Didn't Look Right

Norfolk, VA – The article "It Didn't Look Right" in the AUG '78 APPROACH raises a suspicion there may be a more serious lesson to be learned from this incident. The marked weights correspond quite well to the actual weights if the marked weights were kilograms, not pounds. You may wish to check your source to determine whether this could have happened. If not this time, expect it soon with more and more of the world going metric.

Scott R. Jones
Norfolk, VA

• You're right and wrong! Crews can expect to see more metric in the future. This time, however, the weights were in pounds.

Re: "DWEST Revisited"

Eglin AFB, – I look forward to reading your publication each month, primarily because of the excellent articles involving helicopters. Being a UH-1N driver, the "DWEST Revisited" article in your SEP '78 issue of APPROACH immediately caught my eye. The survival training program implemented by VQ-3 is certainly noteworthy and the innovators deserve much credit. I only hope the Twin-Huey in the salt spray pictured on page 20 gets a good washing pronto.

Maj Alen C. Murphy, USAF
Assistant Chief of Safety

"WHERE ARE YOUR "EARS?"

NAS Pensacola – "Sound suppressors", "Mickey Mouse ears" or just plain "ears". Whatever you call them their purpose is to save your hearing and health. But where you leave them lying can affect anothers health.

This incident happened recently in a T-2 squadron.

One of the last flights of the day had returned from a cross country flight. The plane captain was directing it to the chocks and he noticed something hanging from the port landing gear. After chocking the aircraft and shutdown the plane captain

went to the port landing gear and removed a pair of "Mickey Mouse ears" that were hanging from the main landing gear exterior position light bracket.

They were turned into QA who immediately questioned the pilot as to where he had made his last stopover. The pilot stated that he had just left from a neighboring naval base where he had refueled at the transit line for the last leg of his flight.

He was questioned on his full walkaround with no discrepancies noted. He did say that there were three or four personnel standing around the port side of the aircraft but that they had left before starting the engines. The "ears" had a name plus a number stenciled on them. The transit line of the neighboring base was then called and sure enough they were still looking for the same "ears".

How these "ears" stayed hanging on the bracket through the taxi out, take off, retraction of the gear, extention of the gear, landing and then the taxi into the chocks without falling off is a minor miracle. But just think what could have happened?

First, they could have fallen off on the taxi way or runway to become FOD for the next aircraft to come along.

Second, it could have been a formation flight. How would you like to be flying the second bird of that flight and watch something come flying out of the landing gear of the lead aircraft and have it fly down your intake?

And finally, what if there hadn't been enough room in the wheel well for the extra equipment that was going up with the landing gear? How does a jammed landing gear sound? "Wheels up landing anyone?" But as it happened no damage was done to the aircraft.

So next time you pick up or lay down your "ears" remember this. Then maybe tomorrow you won't be asking yourself, "Where are my ears?"

AMH2 Barry D. Benthall

The Navy is looking for qualified young men and women, between the ages of 17 and 27. Do you know someone who is interested? Or might be? If so, just fill out this coupon and send it to:

Navy Opportunity Information Center
P. O. Box 2000
Pelham Manor, NY 10803

I believe the following young person might be interested in additional information about Navy and may be qualified for enlistment in the Navy. (F)

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City _____ **State** _____ **Zip** _____

Phone _____ **Date of Birth** _____
(area code) (number) (day) (month) (year)

Years of Education Completed _____

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Vol. 24 No. 5 NAVAIR 00-75-510

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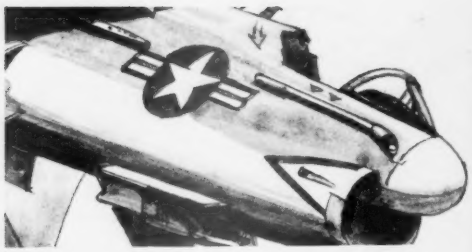
CONTENTS

1 Survival:
The Problems
By LT Stephen C. Hallam
Some Solutions
By LCDR W. W. McIntosh
8 The Right Time, But the Wrong Place
10 Colds in a Capsule
12 Judgment Failed
16 Great Aviators I Have Known
18 Anyone Have a Clue?
22 Gimme Air
24 Checklists and Chowboxes
By LT John Odom
25 Checklist Complete
By AWC Ralph A. Beatty
26 Collective Bounce
28 A Near Mid-Air
29 No One Bothered

Departments

6 Air Breaks
15 Bravo Zulu
20 Anymouse
30 Letters



Pg. 1

Pg. 18

Pg. 24

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CREDITS/This month's cover by staff artist Blake Rader depicts the Navy's A-7 pulling out of a night bombing run.

SOME REPEAT GRIPES DON'T COME BACK.

Idea contributed by ADC Howard A. May, USNR-R.

As long as you
aren't going anywhere,
isn't it a good time to
study emergency procedures?